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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/597,211

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EXAMINER

KENNEDY, TIMOTHY J

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,211	<b>Applicant(s)</b> MARSAC, NICOLAS	
	<b>Examiner</b> TIMOTHY KENNEDY	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/27/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The inclusion of the phrase "this machine implementing the steps of the method according to claim 1" in claim 3 is unclear and indefinite. Since claim three is an apparatus claim it is improper for the recitation of a process inside the apparatus.

5. Also in claim 3 lines 11 and 12 "by means of at least jets".

6. This is vague and indefinite to the number of jets the Applicant is claiming. For examination purposes the Examiner will treat this as "at least two jets".

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Examiner wishes to point out to applicant that claims 3-10 are directed towards an apparatus and as such will be examined under such conditions. The material worked upon or the process of using the apparatus is viewed as recitation of intended use and is not given patentable weight (Please see MPEP 2114 R1-2115 R2 for further details).

9. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al (WO 95/05943: Already of Record), in view of Wicker et al (U.S. PreGrant Publication 2006/0022379). Regarding claim 1, Sanders et al teach:

10. A first step consisting of the timed supply of a first modeling material to at least a first jet positioned on a first fixed working station, and of moving the jet with respect to the supporting surface along second and third directions perpendicular to the first direction and over a determined pathway, to deposit drops of material on the supporting surface

11. Sanders et al teaches a rapid prototyper that has three jets to deposit three different materials in a given shape, by depositing drops layer by layer, the jets are connected to supports to move in two directions perpendicular to the movement of the work station (Abstract and page 4 lines 13-33 and page 5 lines 1-20)

12. Sanders et al do not teach:

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13. Characterized in that the number of fixed work stations is  $2.N$ , the supporting surface consists of  $2.N$  platforms on each of which the process is implemented, each of the two  $2.N$  platforms is alternately moved to lie under at least one of the  $N$  first jets to conduct the first step, then under at least one of the  $N$  second jets to conduct the second step, in order to deposit simultaneously  $2.N$  deposits of material on the  $2.N$  platforms

14. In the same field of endeavor Wicker et al teaches the use of multiple stereolithography vats that are rotatable around an axis (paragraphs 0048 and 0049). Stereolithography vats are directly analogous to claimed platforms. Wicker et al shows 3 or 4 rotating platforms in his embodiments (Figures 4, 7-9)

15. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the multiple rotatable platforms as taught by Wicker et al, with the multiple material jets as taught by Sanders et al, since this would allow for the simultaneous production of multiple models made from different model materials.

16. Further regarding claim 1, the combination of Sanders et al and Wicker et al teach:

17. A second step consisting of conducting the same operation with a second jet positioned on a second fixed work station and supplied with a second material over a determined pathway, this cycle being renewed a sufficient number of times, with pathways determined in relation to the object, in order to construct the object.

18. Even though the material jets as taught by Sander et al are used on one platform, it would have been obvious to one of ordinary skill if using the multiple

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rotatable platforms of Wicker et al to apply different jets to each of the platforms for the reason stated previously.

19. Regarding claim 2, Sanders et al further teach:

20. Surface shaving of the last deposited layer is performed after every second operation under a shaving station with at least one shaver mounted rotatably about a fixed axis perpendicular to a first direction (Figure 1 part 24 and page 21, lines 11-14).

21. The shaving system of Sanders et al is not fixed, but this is an obvious variant since there are only so many ways to try and establish a shaving system within a rapid prototyper. It has been shown that a person of ordinary skill has good reason to pursue the known options in their art. If this lead to an anticipated success, it is likely that it was not due to innovation but of ordinary skill and common sense. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1397 (2007)

22. Regarding claim 3, Sanders et al teach:

23. By means of at least [two] jets each supplied with one of the two materials at fixed work stations, and mobile with respect to a main carriage along a second direction perpendicular to the first direction, the main carriage being mobile with respect to the fixed depositing station along a third direction perpendicular to the first direction (Abstract and page 4 lines 13-33 and page 5 lines 1-20)

24. Sanders et al do not teach:

25. Characterized in that the supporting surface consists of 2.N platforms on each of which the process is implemented simultaneously, the 2.N platforms being moved at the same time and alternately under a number N of first depositing stations each carrying a

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first jet, by means of a mobile secondary carriage to implement the first step, and under a same number N of second fixed depositing stations each carrying a second jet by means of a mobile secondary carriage, to implement the second step in order to produce 2.N objects simultaneously.

26. In the same field of endeavor Wicker et al teaches the use of multiple stereolithography vats that are rotatable around an axis (paragraphs 0048 and 0049). Wicker et al shows 3 or 4 rotating platforms in his embodiments (Figures 4, 7-9).

27. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the rotating platforms as taught by Wicker et al, using the Sander s et al apparatus, since this would allow for the simultaneous production of multiple models made from different model materials.

28. Even though the material jets as taught by Sander et al are used on one platform, it would have been obvious to one of ordinary skill if using the multiple rotatable platforms of Wicker et al to apply different jets to each of the platforms for the reason stated previously.

29. Regarding claim 4:

30. A number N of surface shaving stations, positioned every second fixed depositing station between two adjacent depositing stations.

31. The shaving system of Sanders et al is not fixed, but this is an obvious variant since there are only so many ways to try and establish a shaving system within a rapid prototyper. Sanders et al teach the use of a shaving system (Figure 1 part 24), it would have been obvious if using the multiple rotatable platforms as taught by Wicker et al to

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include the desired number of shavers, since there are only so many shaver/platform orientation that one of ordinary skill could try. It has been shown that a person of ordinary skill has good reason to pursue the known options in their art. If this lead to an anticipated success, it is likely that it was not due to innovation but of ordinary skill and common sense. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1397 (2007)

32. Regarding claim 5:

33. The supporting surface is mounted rotatably about a main axis parallel to the first direction, the 2.N platforms being spaced at an angle from each other by an angle pitch of  $\pi/N$ , the 2.N depositing stations also being positioned at an angle of  $\pi/N$ .

34. Wicker et al, for the reasons stated previously, teach in one embodiment (Figures 7-9) that four platforms are mounted rotatably around a central axis, and are spaced apart 90 degrees.

35. As previously shown, when combined with the Sanders et al the deposition jets would also be positioned 90 degrees apart.

36. Regarding claim 6:

37. The number N equals 1, the angle pitch is  $180^\circ$ , the fixed shaving stations being offset by  $90^\circ$  with respect to the two fixed work stations.

38. Wicker et al, for the reasons stated previously, teach the use of three or four stations mounted rotatably around an axis (Figures 4, 7-9). Since there are only so many ways to mount multiple platforms to rotate on an axis, two platforms would have been an obvious variant to try. It has been shown that a person of ordinary skill has good reason to pursue the known options in their art. If this lead to an anticipated



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success, it is likely that it was not due to innovation but of ordinary skill and common sense. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1397 (2007)

39. Regarding claim 7, Wicker et al, for the reasons stated previously, teach:

40. The supporting surface is carried by a crossbar mounted rotatably about the main axis and carrying two opposite platforms

41. Wicker et al teach the use of a pole with supports that are rotatably mounted with the multiple platforms (Figure 4, parts 36, 38, and 39). The Examiner considers the two structures to be the same.

42. Regarding claims 8 and 9, Wicker et al, for the reasons stated previously, teach:

43. Claim 8) An angle encoder located at the base of the crossbar

44. Claim 9) The crossbar is driven by a motor and a wheel/worm screw drive system

45. Wicker et al teach the use of a motor (Figure 4, part 40). It would have been obvious to one having ordinary skill in the art that a motor used for rotating an apparatus used in precision model making, would also include an encoder to know when to stop rotating. It would have also been obvious to one having ordinary skill that the motor accomplishes the same purpose as the wheel/worm drive.

46. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al and Wicker et al as applied to claim 3 above, and further in view of Russell et al (U.S. PreGrant Publication 2004/0265413). Regarding claim 10, Sanders et al and Wicker et al do not teach:

47. The main and secondary carriages are driven by linear motors.

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48. In the same field of endeavor, Russell et al teach the use of linear actuators (I.e. motors) in the movement of parts in a three dimensional printer (paragraph 0051).

49. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the linear motor as taught by Russell et al, using the apparatus of Sanders et al and Wicker et al, since linear motors are known to be smooth moving and precise in their movements. This would provide for a more precisely made three dimensional model.

### ***Conclusion***

50. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

51. U.S. Patent 6,325,961: encoder

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY KENNEDY whose telephone number is (571) 270-7068. The examiner can normally be reached on Monday to Friday 9:00am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on (571) 272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

tjk

/Joseph S. Del Sole/  
Supervisory Patent Examiner, Art Unit 1791